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The School Lunch—A Component of Educational Programs

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School feeding programs have been the topic of much discussion in recent months. Some see them primarily as welfare programs; some see them as a partial solution to malnutrition in children at all economic levels; while others believe these programs to be simply food service with little attention to nutritional goals. Several of our readers have requested information on the National School Lunch Program as a basis for (1) answering the questions that arise in community nutrition work and (2) contributing to community understanding of the lunch program.

In this issue of NPN, we report on the National School Lunch Program and how it is kept nutritionally in tune with the times. We also suggest a more significant role for this program in the comprehensive education of our youth.

Public Law 396, The National School Lunch Act, was approved June 4, 1946. In the declaration of policy it reads, "It is hereby declared to be the policy of Congress, as a measure of national security, to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other foods, by assisting the States, through grants-in-aid and other means, in providing an adequate supply of foods and other facilities for the establishment, maintenance, operation, and expansion of nonprofit school lunch programs.

"Lunches served by schools participating in the school lunch program under this Act shall meet minimum nutritional requirements prescribed by the Secretary [of Agriculture] on the basis of tested nutritional research. Such meals shall be served without cost or at a reduced cost to children who are determined by local school authorities to be unable to pay the full cost of the lunch. No physical segregation or other discrimination against any child shall be made by the school because of his inability to pay. School lunch programs under this Act shall be operated on a nonprofit basis."

The law has been amended, but over the years, it has remained essentially the same as regards:

1. Who the lunch is intended to reach—ALL children including those who cannot afford to pay.
2. The anonymity of children who receive free or reduced cost lunches—it must be protected.
3. The nutritional quality of the lunch—the law has continued to indicate that lunches shall be based on tested nutritional research. Although not stipulated in the law, the nutritional goal has emerged as one-third of the current recommended dietary allowances for school-age children as suggested by the Food and Nutrition Board, National Academy of Sciences-National Research Council.

From this it becomes apparent that the National School Lunch Program is not primarily a welfare program—it is a food program for children. It has only a small welfare component. There are many more families who can pay for their children's lunches than those who cannot.

It is the obligation of the school to protect the anonymity of the child who cannot afford to pay for his lunch. Even though a small proportion of children may benefit physiologically, such practices as larger servings or "seconds" only for the children receiving free or reduced cost lunches do not protect the child's anonymity.

From the inception of the program, close attention has been given to provide guidance material designed to safeguard the nutritional quality of the lunch—the type A pattern, a menu planning guide, and a buying guide for type A lunches.

THE LUNCH PATTERN

To comply with both the letter and spirit of the law, the lunch must provide an assortment of foods in amounts that, on the average, will meet a desirable nutritional goal. To promote acceptability and participation, the lunch must also look good and taste good to children and be priced within the means of the majority of children.

To promote ease in menu planning and in evaluating

menus for reimbursement, nutritionists in USDA developed a lunch pattern expressed in amounts of food that took nutritional goals and acceptability into account. The rationale behind each item in the pattern was discussed in Nutrition Program News, November-December 1968.

Foods in the Type A Pattern

Meat or alternate
Fluid whole milk
Fruit or vegetable—two sources
Bread—enriched or whole grain
Butter or margarine

The pattern has been reviewed several times since it was developed in 1946. Recommendations have been made for interpreting the pattern in a way that will result in lunches of good nutritional quality.

EVALUATING THE PATTERN

In reviewing and possibly updating the pattern, nutritionists are concerned with changes in (1) current nutritional goals and (2) food consumption practices of people. They also consider adjustments that might be made in interpreting the present pattern to produce lunches of desirable nutritional quality. Several tools were used in the most recent review.

Recommended Dietary Allowances. — In 1968, the Food and Nutrition Board, National Academy of Sciences-National Research Council published revised dietary allowances for people of all ages. The 1968 allowances for school-age children were different in some respects from previous allowances for the school-age population. For example, they included recommendations for nutrients for which we have not had allowances previously, such as vitamin B₆, B₁₂, and magnesium. Thus, the lunch pattern needed review in light of these recommendations.

Study of the Nutrient Content of the School Lunch. — In 1966, a study was initiated to test the interpretation of the type A lunch pattern. Three hundred schools across the Nation participated in the study. Twenty actual lunches were collected from each school, packed in dry ice, and forwarded to a research laboratory for nutrient analysis. The study was designed to learn how effective the pattern is as a guide to the service of lunches that will meet the nutritional goals of the National School Lunch Program (one-third of the recommended dietary allowances for children as set forth by the Food and Nutrition Board, National Academy of Sciences-National Research Council).

Findings of the recent survey on the nutrient content of the type A lunch showed that on the *average* lunches

met or exceeded the nutritional goal for all nutrients studied, except *iron* and *magnesium*. "On the average" meant that many schools were below the goal in certain nutrients such as vitamin A and B₆, iron, and magnesium. Lunches also tended to be short in food energy.

If the nutritional quality of the lunch is to be safeguarded, food sources of vitamins A and B₆, iron, magnesium, and food energy must be provided in adequate amounts. Many schools served lunches that provided a large proportion of calories from fat. Thus, attention should be given to keeping the fat to moderate amounts.

Food Consumption Practices of Households.—

Over the years, it has become apparent that the school lunch has a potential for helping to fill any nutritional gap that may exist between the food available to the child at home and the child's total food needs. Nationwide food consumption studies provide information about the food available to children at home and the choices that are acceptable to them. For example, the most recent nationwide food consumption study showed that milk consumption had decreased somewhat, whereas the consumption of soft drinks had increased tenfold over the last 10 years. Milk is an important source of calcium, and analysis of the data showed that when diets of households were poor, calcium was likely to be one of the nutrients in short supply. Therefore, the milk in the school lunch helps to fill this gap.

The review of the pattern using the above-mentioned tools of evaluation resulted in a recommendation for menu planning now being tested in a number of schools.

A RECOMMENDATION FOR MENU PLANNING

The present menu planning guide includes the following recommendations:

1. A good source of vitamin A twice a week. A list of good sources of vitamin A is provided in the guide.
2. A good source of vitamin C each day. Good sources of vitamin C are also listed.
3. Several sources of iron each day. The guide provides suggestions for food sources of iron.
4. Other foods to round out meals and supply energy.

To help menu planners better achieve the nutritional goals of the National School Lunch Program, the following changes in guidelines were considered: More servings per week of worthwhile sources of vitamin A; more servings per day of sources of iron; and added lists of valuable sources of vitamin B₆ and magnesium. Less emphasis on vitamin C is possible because of the lowered recommended allowance for this nutrient and because many important sources of vitamin C would also appear on the other lists.

After careful study of the problem, it was decided to explore the possibility of suggesting one list of foods or combinations of foods to be included in the lunch. Most

foods are not single nutrients but packages of nutrients, and perhaps foods or food combinations that supply the package of nutrients needed should be recommended. The type A pattern was studied, and the average nutritional contribution of each grouping in the pattern was estimated.

The fruit or vegetable group presented the greatest range in nutrient value. Therefore, a recommendation was needed that would assure the choice of combinations among the fruits and vegetables that would supply desirable amounts of the nutrients wanted from this group.

It was decided to explore the possibility of using foods to enhance other foods. For example, carrots alone do not contain the needed nutrients in adequate amounts, but $\frac{1}{4}$ cup peas added to $\frac{1}{4}$ cup carrots do. To safeguard the flexibility of the pattern, a comprehensive list of foods and food combinations would be needed.

Since the study of lunches indicated that calories were too often marginal or low, it was decided to consider the possibility of including well-chosen desserts on the suggested list of foods. Desserts are not a required component of the lunch. However, desserts are often served to increase the nutrients and calories in the lunch as well as to add appeal. Also, desserts often provide part of the vegetable-fruit requirement for the lunch.

A list of possible choices has been developed and will be expanded as recipes and convenience foods are adapted in the laboratory that provide the desired nutrient package (key foods). The menus are planned as usual, except for fruits, vegetables, and desserts. At least two foods or two combinations of foods are chosen from the recommended list of key foods. The menu is then checked to be sure it also includes $\frac{3}{4}$ cup fruit and vegetable.

For example, suppose fish sticks are the entree for the day. Roll and butter and milk will also be included. Small servings ($\frac{1}{4}$ cup each) of stewed tomatoes and green beans (a combination that counts as one key food) are added. One more key food is needed. Gingerbread with apricot sauce ($\frac{1}{4}$ cup sauce) is selected to round out the meal. On checking fruits and vegetables, we used three $\frac{1}{4}$ cup servings to make up the $\frac{3}{4}$ cup required for compliance. This menu resembles menus served in schools across the Nation. However, a little more attention is given to the combinations of fruits and vegetables and inclusion of selected desserts.

Another example: Beef stew is the entree. A corn muffin and milk are also included. A serving of beef stew includes $\frac{1}{4}$ cup vegetables that count toward the $\frac{3}{4}$ cup requirement for fruits and vegetables, but these vegetables are not key foods. Thus, we need to add two key foods and we still need $\frac{1}{4}$ cup vegetable or fruit to total $\frac{3}{4}$ cup. A small serving of tomato juice ($\frac{1}{4}$ cup minimum) will count as one key food, and $\frac{1}{3}$ cup serving of apple crisp

will serve as the second. The requirement for fruits and vegetables has been more than met, and the resulting menu is one that is popular with a great many children.

The list allows for flexibility. The fact that two foods may be needed to count as one key serving does not mean that they must be mixed or even prepared in the same way. If $\frac{1}{2}$ cup peas and carrots are used as a key food, the peas can be served hot and the carrots can be raw sticks. Another example might be sauerkraut and tomato juice. The sauerkraut can be served on a hot dog and the tomato juice appear as an appetizer.

Lunches are now being planned in schools using the key list and taking part in a 3 months' test. At the end of that period, lunchroom managers will report on ease of menu planning, the effects on total costs, meal-preparation time, and acceptability of lunches. If the method proves to be satisfactory from a practical standpoint, USDA nutritionists are confident that, where needed, lunches can be upgraded nutritionally more easily with this method than by having menus checked against four lists of nutrient sources.

NUTRITION EDUCATION AND THE SCHOOL LUNCH

Thus far, we have discussed the steps taken to make a desirable assortment of foods available to children in the form of lunches that look good and taste good. Making food available to children is no assurance that the child is getting the food he needs. Unless the child eats the food, his body will not benefit. He must be helped to learn to eat wisely. The school lunch is an excellent tool for achieving this objective, but it cannot do the job alone.

When a child is taught to read, he is given a book. He is not expected to be able to read because a book is available. It is used as a tool. When a child is taught to write, he is given paper and pencil or crayon. These are tools. If he does not write well the first time, the paper is discarded, fresh paper is given, and the teacher tries again. By the same token, when a child is taught to eat, food is made available. If the child does not eat well at first, there is no reason for giving up. Try again. Some plate waste in the lunch is inevitable if children are to have an opportunity to learn to enjoy a wide variety of foods.

School lunch personnel cannot and should not be expected to do this teaching. They make a good lunch available, and they can help encourage children to eat. However, encouragement needs to come also from the teaching staff and parents. Classroom learning should result in children becoming convinced that good habits developed at home and in the lunch program are a good and enjoyable way to eat. Only then will these practices be carried over into adulthood. This more comprehensive program requires that schools make lunch a part of the curriculum, but very few schools have done this.

LUNCH IN A SCHOOL CURRICULUM

At a workshop held under the auspices of the Oregon School Food Service Association and the Oregon Department of Education, Dr. Robert P. Selby, principal of Woodlawn School, Portland, told why and how he had incorporated the lunch program into the school curriculum and what some of the outcomes were.

The children at Woodlawn School had a 60-minute lunch period. The lunchroom was noisy and disorderly, there was an excess of wasted food, and both teachers and children were frustrated and less productive after lunch.

The situation was improved when the lunch period was reduced to 30 minutes with no free playtime, but the problem was certainly not solved. The children only took 15 to 20 minutes to eat, and in the remaining time, aggression and hostilities developed on the part of a few children.

Another plan was tried. A 45-minute noon period was scheduled for children in grades 3 to 8. Half of the period is spent in the lunchroom and half in activities supervised by aides under the direction of a teacher. Half of the children are in the lunchroom while the other half are in supervised activity.

Teachers eat with their classes. Thus, any problems arising from noon activities can be discussed and worked out in regular class meetings.

Primary children eat lunch in their classrooms. Lunch count is taken at 10 a.m. by aides, who also collect the money. Food is prepared according to count, put into serving containers, and delivered to the classrooms.

One group of four classes has lunch from 11:30 to 11:50 a.m., then has supervised activities with aides under the direction of a teacher while classroom teachers get a 30-minute noon break. Another group of four classes has an activity period from 11:30 to 11:55 a.m., and has lunch from 11:55 a.m. to 12:15 p.m. Activities include art, music, games, and stories. This procedure is followed in a second lunch hour from 12:15 to 1 p.m.

Several methods are used to serve food to the children in the classroom. Some teachers sit at the head of a table and serve, passing filled plates down the table to the children. Other teachers pass the serving dishes, and children help themselves. In still other rooms, food is served from a buffet where children may either be served by someone else or may help themselves.

Aides are a part of the salaried staff, but Dr. Selby feels that dependable volunteers could do the job just as well.

Outcomes.—Dr. Selby listed some definite outcomes of his program.

1. More children are eating a well-balanced nutritious meal.
2. There is less plate waste.
3. A greater variety of food is eaten. Since the teacher is involved directly in the lunch program, a variety of classroom procedures are used to accomplish this.
4. Afternoons are much more productive. The children are not distracted by the noise of 250 children eating all at once in a gymnasium that serves as a cafeteria.
5. Arguments and disorders which formerly intruded into afternoon classes are decreased, and are managed better when they do arise. Harmonious relationships have a much better chance to develop.

Future Expansion.—Dr. Selby sees the possibility of enriching teaching with experiences with food. For example, when children are studying other regions or countries in social studies, appropriate regional or national dishes could be included in the lunch.

He also sees the possibility of extending the variety of foods children will eat by having well-planned "taste-tests." When an unfamiliar or previously rejected food is to be served, a small amount can be prepared in advance for a class to taste—with no pressure exerted. This may increase the acceptability of the food when it does appear on the menu.

Dr. Selby concluded his presentation by saying:

"There is some research evidence to indicate that adults who have rigid personalities and have difficulty coping with changes in the world around them also have rigid food habits. Cafeteria managers and workers, by teaming up with teachers to help children develop flexible food habits, contribute to the development of flexible personalities. One of contemporary society's greatest needs is for humane human beings who can accommodate to a rapid rate of social and material change. You [school lunch personnel] can play an important part in meeting this need."

IN CONCLUSION

The nutritionists in USDA can and will continue to provide guidance to help schools provide a desirable assortment of foods in amounts recommended for the school-age child. We will also continue to urge that the lunch experience be incorporated into the total curriculum. We believe the school lunch will not have much impact on the food intake of children without understanding cooperation of parents, administrators, teachers, and the community.